

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

1. (currently amended) A fluid heating device comprising a housing having an internal chamber and a fluid inlet and a fluid outlet in fluid communication with said chamber; a rotor disposed centrally in said chamber and mounted for rotation within said chamber about an axis of rotation, said rotor in spaced relation to said housing to provide a generally annular passage for fluid to travel from said inlet towards said outlet, said rotor having a plurality of interior passageways formed therein and a plurality of openings formed on an exterior surface thereof confronting fluid in said passage and disposed in a plurality of circumferential rows spaced about said rotor along the longitudinal axis of said rotor, wherein said exterior surface of said rotor terminates at first and second planar end faces on said rotor, and wherein one of said plurality of interior passageways is a longitudinal passageway extending along said axis of rotation for a distance greater than the distance between said first and second planar end faces, wherein rotation of said rotor causes said plurality of openings to impart heat-generating cavitation to a fluid entering said chamber.

2. (original) The device according to claim 1 wherein said openings are disposed radially outwardly of said interior passageways and at least a proportion of said interior passageways and at least a proportion of said plurality of openings are in fluid communication.

3. (original) The device according to claim 1, and further comprising at least one fluid throttling conduit disposed in at least one of said interior passageways.

4. (original) The device according to claim 1, and further comprising at least one fluid throttling conduit disposed in said rotor and in fluid communication with at least one of said plurality of openings.

5. (original) The device according to claim 1 wherein said interior passageways provide a heat transmitting surface to pre-heat at least a proportion of said fluid entering said passage.

6-8. (canceled)

9. (original) The device according to claim 1 wherein said interior passageways form an interior vessel for the storage of fluid, said openings disposed radially outwardly of said

interior vessel and at least a proportion of said plurality of openings communicating with said vessel, said vessel at least partially evacuated of fluid during rotation of said rotor.

10. (currently amended) The device according to claim [[8]] 9 wherein the evacuated fluid passes through at least certain ones of said openings into said passage.

11. (currently amended) The device according to claim 1, ~~further comprising a drive shaft for imparting mechanical energy to said rotor, said drive shaft supported in said housing by at least two bearings, one of said at least two bearings being nearer a distal end of said rotor and another of said at least two bearings being nearer the proximate end of said rotor, wherein said at least one of said two bearings lies axially adjacent said inlet~~ wherein said housing further comprises at least one fluid port, said fluid port being disposed between said inlet and the first planar end face on said rotor.

12. (original) The device according to claim 10, and further comprising a fluid seal disposed in said housing and surrounding said drive shaft, said seal and said inlet disposed on opposite axial sides of said housing.

13. (original) The device according to claim 12, and further comprising means to cool said seal.

14. (currently amended) The device according to claim 1 wherein said ~~exterior surface of said rotor terminating at first and second planar end faces on said rotor, and wherein one of said plurality of interior passageways is a longitudinal passageway extending along said axis of rotation for a distance greater than the distance between said first and second planar end faces;~~ said rotor further comprises a fluid entrance port disposed axially adjacent said inlet, said entrance port communicating with said longitudinal ~~passageway~~ passageway.

15. (original) The device of claim 1, and further comprising a plurality of annular fluid distribution grooves in said rotor, wherein a groove interconnects all openings in a respective circumferential row.

16. (currently amended) The device of claim 1, and further comprising a plurality of annular fluid distribution grooves in said rotor, wherein a groove connects all openings in a respective ~~circuferential~~ circumferential row to said interior passageway.

17. (currently amended) The device according to claim 1 ~~wherein at least one row of said openings are circumferentially spaced at uniform intervals~~ further comprising a plug disposed in said longitudinal passageway, wherein said interior passageways form an interior vessel for the storage of fluid, said openings disposed radially outwardly of said interior vessel, said vessel at least partially evacuated of fluid during rotation of said rotor.

18. (currently amended) The device according to claim 1 ~~wherein at least one row of said openings are circumferentially spaced at variable intervals~~ 17 wherein at least a proportion of said plurality of openings is in fluid communication with said vessel.

19. (currently amended) The device according to claim 1 ~~wherein at least one row of said openings are circumferentially displaced from any other row of said openings~~ 17 wherein said plug is disposed axially adjacent said inlet.

20. (currently amended) The device according to claim 1 ~~wherein some of said openings are formed as bellmouthed holes, the relative diameter of the bellmounth exceeding the diameter closer to the axis of rotation~~ 17, further comprising a throttle hole disposed in said plug.

21. (currently amended) The device according to claim 1 wherein ~~some of said openings are formed a radial holes, the depth of which exceeding in distance to a greater dimension than the radius dimension of said rotor~~ said rotor further comprises a fluid entrance port disposed axially adjacent said inlet, said entrance port communicating with said longitudinal passageway and said fluid entrance port being disposed radially closer to said axis of rotation than said fluid outlet.

22. (original) The device according to claim 1 wherein some of said openings are formed as radial holes, the depth of which exceeding in distance to a greater dimension than the radius dimension of said rotor and where said radial holes interconnect with each other internally of said rotor to form a continuous pathway for the transmission of shock waves.

23. (original) The device according to claim 1 wherein at least one row of said openings are fluidly interconnected by an annular groove disposed in the interior of said rotor, and further comprising at least one fluid throttling conduit disposed radially inwardly of said annular groove to be nearer said axis of rotation than said openings.

24. (original) The device according to claim 1, and further comprising means to prime said chamber with priming fluid.

25. (currently amended) The device according to claim 1 wherein ~~said fluid inlet and said fluid outlet each opening exteriorily of said housing~~ longitudinal passageway is disposed coincident with said axis of rotation.

26. (original) The device according to claim 1 wherein said housing includes a rear housing member and wherein said fluid inlet is disposed in said rear housing element in a location radially closer to said axis of rotation than said fluid outlet; and further comprising a partitioning wall in said rear housing member and separating said fluid inlet from said internal chamber, at least one port formed in said partitioning wall and fluidly linking said inlet to said internal chamber.

27. (currently amended) The device according to claim 1 wherein ~~said housing includes a rear housing member and wherein said fluid inlet is disposed in said rear housing element in a location radially closer to said axis of rotation than said fluid outlet; further comprising a partitioning wall in said rear housing member and separating said fluid inlet from said internal chamber; and further comprising an entrance port in said rotor~~

~~and an axial end of said rotor extending into said partitioning wall to communicate said entrance port with said fluid inlet~~  
another of said plurality of interior passageways is a radial passageway, said radial passageway being disposed closer to the second planar end face than to said first planar end face of said rotor, and said radial passageway being in fluid communication with said longitudinal passageway and terminating on said exterior surface of said rotor.

28. (currently amended) The device according to claim 1 ~~wherein said fluid entering said internal chamber undergoes a pre-heating stage and a primary heating stage, said interior passageways providing said pre-heating stage and said annular passage providing said primary heating stage~~ 27, further comprising a fluid throttle disposed in said radial passageway.

29. (currently amended) The device according to claim 1 ~~wherein said chamber is a generally a cylindrical volume and said rotor is in the form of a cylindrical element~~ another of said plurality of interior passageways is an inclined passageway, said inclined passageway being disposed closer to the second planar end face than to said first planar end face of said rotor, and said inclined passageway being in fluid communication with said longitudinal passageway at a lesser radial distance from said axis of rotation and terminating at the second planar end face of



said rotor at a greater radial distance from said axis of  
rotation.

30-34. (canceled)